Are Individual Dietary Behaviors Associated with Neighborhood Socioeconomic Status?

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Introduction
Numerous social, economic, educational, and cultural factors may influence the types of food products people consume. Few studies have examined the potential influence of neighborhood socioeconomic status (SES) on dietary behaviors. A recent study in Scotland identified significant differences across neighborhoods in the consumption of foods which research has historically controlled for: individual-level factors, including income and occupational class. Another recent study investigated neighborhood differences in dietary behaviors, numerically within a large cohort using multilevel models and controlling for individual level factors. This study found consistent differences in food intake across neighborhoods. The literature contains stronger evidence supporting how neighborhood socioeconomic status predicts physical activity levels. Researchers have identified socioeconomic status as a predictor of individual dietary behaviors, but further research is needed to better understand how SES may influence dietary behaviors.

After establishing the important role of socioeconomic status in shaping diet, we must next look for the causal mechanisms within this relationship. The potential impact of neighborhood socioeconomic status on individual dietary behaviors may be mediated by structural components of neighborhood public health policies and interventions. Few studies have examined the relationship between neighborhood socioeconomic status and individual dietary behaviors or the relationship between neighborhood socioeconomic status and individual dietary behaviors.

Analysis Model

A series of regression analyses were conducted using the Statistical Package for Social Sciences (SPSS) Version 10.0 to test our hypotheses that: 1) individuals living in neighborhoods with higher socioeconomic status consume less fat and more fiber than individuals living in neighborhoods with lower socioeconomic status, and 2) the relationship between neighborhood socioeconomic status and individual dietary behaviors is mediated by neighborhood context. The mediational relationship depicted in the conceptual model proposed was tested using methods described by Baron and Kenny (1986). This approach outlined the following regression equations to estimate the total effect:

Step 1: The independent variables must predict the mediating variables, the independent variables, and the dependent variables.

Step 2: The independent variables must predict the dependent variables.

Step 3: The independent variables and the mediating variables must predict the dependent variables.

Discussion
Tests of our first hypothesis indicate that individuals in neighborhoods with high median income consume fewer fiber than those in lower median income neighborhoods when controlling for individual-level factors such as education andSES. Higher median income neighborhoods tended to have higher median income neighborhoods than those in low median income neighborhoods where lower socioeconomic status neighborhoods tend to have higher median income neighborhoods than those in low median income neighborhoods. However, we did not find any evidence to support the second hypothesis. The guidelines for our analytical methods indicated to establish mediation we must demonstrate socioeconomic status has no effect on dietary behaviors when neighborhood context is controlled. Our test did not yield any statistically significant results to indicate the relationship between neighborhood socioeconomic status and individual dietary behaviors is mediated by neighborhood context. There are some aspects of our study to consider that may have limited us from identifying the mediational relationship hypothesized in addition to those mentioned regarding the testing of our first hypothesis. Our sample was primarily composed of educational white females. It is possible the neighborhoods where most of our population resided were comparatively homogeneous, since the trends we expected were not present among our sample. Our sample size was small; however, it was not as large as those in the few similar studies which studied large, nationally-based samples. It is also possible individuals sampled who refused to participate, tend to have different socioeconomic status levels and dietary behaviors than those who agreed to be in the study. More specifically, our sample added a relatively new area of focus to the current research, identifying the proper measures to gauge neighborhood geography and neighborhood context. Perhaps the use of different measures would have resulted in the findings we predicted.

Future Directions
Overall, our findings offer some new evidence to support the idea that elements of neighborhood geography and neighborhood context may mediate the relationship between neighborhood SES and dietary behaviors of individuals. One of our measures of socioeconomic status, median income, was not strongly associated with our dietary measures, suggesting that future research needs to evaluate what mechanisms are responsible for the relationship between neighborhood context and dietary behaviors. In conclusion, our study may have led to the development of other models testing potential mechanisms of the relationship between neighborhood socioeconomic status, neighborhood context, and dietary behaviors. Identifying the relationship between dietary behaviors, neighborhood socioeconomic status, and neighborhood context has the potential to yield public health interventions and policies. Therefore, the scientific community should strive to identify the causal mechanisms within this relationship. This information could help clinicians and researchers address the neighborhood context that influences people lives. Such initiatives may improve individuals' dietary choices, and reduce the burden of disease associated with individual dietary behaviors.